



SLOVENSKI STANDARD SIST ETS 300 280 E1:2003

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Terminalska oprema (TE) – Oprema za faksimilno skupino 4, razred 1, na digitalnem omrežju z integriranimi storitvami (ISDN) – Preskušanje terminalov

Terminal Equipment (TE); Facsimile group 4 class 1 equipment on the Integrated Services Digital Network (ISDN) Terminal testing

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ICS:

33.050.30	Oprema za teleks, teletekst, telefaks	Equipment for telex, teletext, telefax
33.080	Digitalno omrežje z integriranimi storitvami (ISDN)	Integrated Services Digital Network (ISDN)
35.180	Terminalska in druga periferna oprema IT	IT Terminal and other peripheral equipment

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**Terminal Equipment (TE);
Facsimile group 4 class 1 equipment
on the Integrated Services Digital Network (ISDN)
Terminal testing**

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Foreword

This European Telecommunication Standard (ETS) has been produced by the Terminal Equipment (TE) Technical Committee of the European Telecommunications Standards Institute (ETSI).

This ETS is based upon a number of CCITT Recommendations and is closely related to 4 other ETSs. Details of these documents are highlighted in Clauses 1 (Scope) and 2 (Normative references) of this ETS.

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1 Scope

This ETS contains the details of the Terminal tests for equipment offering group 4, class 1 facsimile functionality.

This ETS is closely related to 4 other ETSs on group 4 class 1 facsimile equipment:

ETS 300 080 [1]	"Integrated Services Digital Network (ISDN); ISDN lower layer protocols for telematic terminals".
ETS 300 087 [2]	"Integrated Services Digital Network (ISDN); Facsimile group 4 class 1 equipment on the ISDN; Functional specification of the equipment".
ETS 300 112 [3]	"Integrated Services Digital Network (ISDN); Facsimile group 4 class 1 equipment on the ISDN; End-to-end protocols".
prETS 300 155 [4]	"Integrated Services Digital Network (ISDN); Facsimile group 4 class 1 equipment on the ISDN; End-to-end protocols tests".

2 Normative references

This ETS incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this ETS only when incorporated in it by amendment or revision. For these undated references the latest edition of the publication referred to applies.

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- [1] ETS 300 080: "Integrated Services Digital Network (ISDN); ISDN lower layer protocols for telematic terminals".
- [2] ETS 300 087: "Integrated Services Digital Network (ISDN); Facsimile group 4 class 1 equipment on the ISDN; Functional specification of the equipment".
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- [3] ETS 300 112: "Integrated Services Digital Network (ISDN); Facsimile group 4 class 1 equipment on the ISDN; End to end protocols".
- [4] prETS 300 155: "Integrated Services Digital Network (ISDN); Facsimile group 4 class 1 equipment on the ISDN; End to end protocols tests".
- [5] CCITT Recommendation T.6 (1988): "Facsimile coding schemes and coding control functions for group 4 facsimile apparatus".
- [6] CCITT Recommendation T.563 (1991): "Terminal characteristics for group 4 facsimile apparatus".
- [7] CCITT Recommendation T.521 (1992): "Communication application profile BT0 for document bulk transfer based on the session service (according to the rules in T.62 bis)".
- [8] CCITT Recommendation T.503 (1991): "A document application profile for the interchange of group 4 facsimile documents".
- [9] CCITT Recommendation T.21 (1988): "Standardized test charts for document facsimile transmissions".
- [10] CCITT Recommendation F.184 (1988): "Operational provisions for the international public facsimile service between subscriber stations with group 4 facsimile machines (telefax 4)".
- [11] CCITT Recommendation F.200 (1988): "Teletex service".

- [12] CCITT Recommendation T.433 (1992): "Document transfer and manipulation (DTAM) - Services and protocols - Protocol specification".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of this ETS, the definitions given in the relevant CCITT series of Recommendations shall apply.

3.2 Abbreviations

For the purposes of this ETS, the following abbreviations apply.

CIL	Call Identification Line
ETS	European Telecommunication Standard
ETSI	European Telecommunications Standards Institute
ISDN	Integrated Services Digital Network
PEL	Picture Element
PICS	Protocol Implementation Conformance Statement
PIXIT	Protocol Implementation eXtra Information for Testing
SUT	System Under Test

4 Test for the coding algorithm of Group 4 facsimile

4.1 Introduction

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The coding algorithm for Group 4 facsimile is defined in CCITT Recommendation T.6 [5] and is tested as stated below.

The receiving capability of an equipment is tested using an electronic test chart, defined in Annex A and called T6Test, and with the test procedure defined in Test Number R1.

The transmission capability of an equipment is tested by the scanning tests defined in Clause 6.

4.2 Test R1

This test requires the following configuration:

- SUT receiving;
- tester transmitting.

Table 1: Test for reception

Test N°	Description	Reference
R1	Tester sends chart T6TEST. Check that SUT displays received image which shall have: <ul style="list-style-type: none"> - areas 1, 2, 3 and 4 with monotonic boundary between the white and black parts of the image; - areas 5, 6, 7 and 8 correctly represented. 	

5 Tests for printing functions of Group 4 facsimile

5.1 Introduction

Printing functions of Group 4 facsimile shall be tested according to the set of tests reported in this Clause. Tests are based on an appropriate test chart whose definition is given in Annex B.

5.2 Set of tests

Printer functions that shall be tested have mainly been derived from the CCITT Recommendation T.563 [6].

They are:

- correct image representation: the left side of the copy has to correspond to the left side of the original, and the top side of the copy has to correspond to the top side of the original;
- correct page orientation (vertical);
- guaranteed reception area (for ISO A4 paper format);
- reception resolution; [SIST ETS 300 280 E1:2003](https://standards.iteh.ai/catalog/standards/sist/467640d1-90f5-41d5-a3b1-9fd4efb84d2/sist-ets-300-280-e1-2003)
- correct paper positioning (centred);
- printing capabilities: number of pels/line, scan line length, nominal number of scan lines/page, blanking margin handling.

Test sequences are reported in table 2.

This set of tests requires the following configuration:

- SUT receiving;
- tester transmitting.

Table 2: Test sequences

Test No.	Description	Reference
R2	Test for correct representation of image and correct orientation of page. Tester sends chart PFTEST. Check that: <ul style="list-style-type: none"> - it is represented with the correct orientation. 	
R3	Test for printing resolution. Tester sends chart PFTEST. Check that: <ul style="list-style-type: none"> - area 1 is between 188,1 and 191,9 mm; - area 2 is between 237,6 and 242,4 mm. 	
R4	Test for paper positioning. Tester sends chart PFTEST. Check that: <ul style="list-style-type: none"> - area 2 includes the imaginary vertical line located in the centre of the page (105 mm from the left or right border). 	
R5	Test for printing capability. Tester sends chart PFTEST. Check that: <ul style="list-style-type: none"> - areas 3 , 4 , 5 , 6 , 7 , 8 are represented and separated correctly. 	
R6	Test for guaranteed reception area. Tester sends chart PFTEST. Check that: <ul style="list-style-type: none"> - area 9 is represented with at least 2 pixels width on each side of the page i.e. pels 78 to 1 151 inclusive (for 200 ppi resolution); - at least portions of areas 10, 11, 12, 13 enclosed in area 9 are represented correctly; - if Call Identification Line (CIL) is not printed at the top, then top side of area 9 is completely represented, and at least 4 steps of area 10 outside area 9 are represented i.e. lines 33 to 2 276 inclusive (for 200 ppi resolution); - if CIL is not printed at bottom, then bottom side of area 9 is completely represented, and at least 4 steps of area 11 outside area 9 are represented; i.e. lines 66 to 2 309 inclusive (for 200 ppi resolution). 	

6 Scanning tests

Table 3: Requirements for the scanner of the facsimile equipment based on test chart n° 3 of CCITT Recommendation T.21 [9]

Test No.	Description	Reference
T1	<p>Test for basic scanned line length is 219,46 mm \pm 1 %.</p> <p>SUT scans and transmits chart n° 3 of CCITT Recommendation T.21 [9] as purchased from CCITT.</p> <p>Verify that:</p> <ul style="list-style-type: none"> - the length of the horizontal scales 3,21 on the top or the bottom of the page is represented by 1 481 to 1 511 pixels when decoded (for 200 ppi resolution); - the image reconstructed is similar to the test chart. 	
T2	<p>Test for scanning density.</p> <p>SUT scans and transmits chart n° 3 of CCITT Recommendation T.21 [9] as purchased from CCITT.</p> <p>Verify that:</p> <ul style="list-style-type: none"> - the length of the vertical scales 3,21 on the left or the right of the page is represented by 2 026 to 2 068 pels (for 200 ppi resolution). 	
T3	<p>Test for position of the document.</p> <p>SUT scans and transmits chart n° 3 of CCITT Recommendation T.21 [9] as purchased from CCITT.</p> <p>Verify that:</p> <ul style="list-style-type: none"> - the top edge of the reproduced document corresponds to one of the first 4 mm of the test chart (Area 3.22 gives an easy reference). 	